

AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims, which replaces all previous versions and listings of the claims.

What is claimed is:

1. (currently amended) A method for selective handling of image data, the method comprising:

addressing data according to a decomposition level index and tessellation block indices, wherein the decomposition level index refers to data sets generated by lossless wavelet decomposition, and the tessellation block indices refer to blocks tessellated from the data sets;

~~identifying~~ selecting an area of interest of the image ~~according to~~ via the decomposition level index and the tessellation block indices; and

handling the area of interest ~~identified by~~ selected via the decomposition level index and the tessellation block indices.

2. (original) The method of claim 1, wherein the decomposition level index corresponds to a resolution level.

3. (original) The method of claim 1, wherein the tessellation block indices comprise a row index and a column index for addressing spatial coordinates of the blocks.

4. (original) The method of claim 1, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

5. (original) The method of claim 1, wherein the blocks comprise a fixed block size.

6. (original) The method of claim 1, wherein addressing comprises creating a plurality of addressable data blocks comprising a plurality of the blocks.

7. (original) The method of claim 1, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

8. (currently amended) The method of claim ~~8~~ 7, wherein the high frequency components of at least one of the successively higher resolution levels are tessellated into sets of the blocks for each of the high frequency components.

9. (currently amended) The method of claim ~~9~~ 8, wherein the decomposition level index corresponds to a resolution level of the respective data sets.

10. (currently amended) The method of claim ~~10~~ 9, wherein addressing comprises addressing the blocks for each of the sub-bands.

11. (currently amended) The method of claim ~~11~~ 10, wherein the tessellation block indices correspond to spatial coordinates of the blocks within each of the sub-bands.

12. (currently amended) The method of claim ~~12~~ 11, wherein ~~identifying~~ selecting the area of interest comprises selecting at least one block of the blocks encompassing a selected area of interest.

13. (currently amended) The method of claim ~~13~~ 12, wherein handling the area of interest comprises retrieving the at least one block.

14. (currently amended) The method of claim ~~14~~ 13, wherein retrieving the at least one block comprises retrieving the at least one block for the high frequency components at the successively higher resolution level relative to a current local resolution level at a client.

15. (currently amended) The method of claim ~~15~~ 14, comprising combining the at least one block for each of the high frequency components with the current local resolution level to reconstruct the area of interest at the successively higher resolution level.

16. (original) The method of claim 1, wherein handling comprises reference marking the area of interest using the decomposition level index and the tessellation block indices.

17. (original) The method of claim 1, wherein handling comprises reconstructing the image in the area of interest using the tessellation block indices to retrieve the blocks selectively from storage.

18. (original) The method of claim 1, wherein handling comprises selectively transmitting data for at least one of the blocks corresponding to the area of interest using the decomposition level index and the tessellation block indices.

19. (original) The method of claim 1, wherein handling comprises forming an image data stream comprising data for at least one of the blocks encompassing the area of interest.

20. (currently amended) The method of claim ~~20~~ 19, wherein forming the data stream comprises creating an addressable superblock of the data for the blocks using the decomposition level index and the tessellation block indices, each of the blocks for each of the data sets being individually addressable within the addressable superblock.

21. (currently amended) A method for selectively displaying image data, the method comprising:

~~identifying~~ defining a spatial region of interest within an image based on a plurality of addressable blocks comprising a decomposition level index and tessellation block indices, wherein the decomposition level index refers to data sets generated from the image by lossless wavelet decomposition, and the tessellation block indices refer to spatial blocks tessellated from the data sets;

requesting a spatial group of the plurality of addressable blocks encompassing the spatial region of interest by referencing the blocks by the decomposition level index and the tessellation block indices; and

reconstructing the image within the spatial region of interest using the requested spatial group.

22. (currently amended) The method of claim ~~22~~ 21, wherein the decomposition level index corresponds to a resolution level, the data sets comprising a plurality of different resolution levels.

23. (currently amended) The method of claim ~~22~~ 21, wherein the tessellation block indices comprise a row index and a column index for addressing spatial coordinates of the spatial blocks.

24. (currently amended) The method of claim ~~22~~ 21, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

25. (currently amended) The method of claim ~~22~~ 21, wherein the spatial blocks comprise a fixed block size.

26. (currently amended) The method of claim ~~22~~ 21, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency

component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

27. (currently amended) The method of claim ~~27~~ 26, wherein the high frequency components of at least one of the successively higher resolution levels are tessellated into sets of the spatial blocks for each of the high frequency components.

28. (currently amended) The method of claim ~~27~~ 26, wherein the addressable blocks comprise a sub-band reference for addressing a desired one of the hierarchical set of sub-bands.

29. (currently amended) The method of claim ~~27~~ 26, wherein requesting the spatial group comprises requesting at least one block of the spatial blocks for each of the high frequency components at one of the successively higher resolution levels relative to a current lower resolution level of the image data.

30. (currently amended) The method of claim ~~30~~ 29, wherein reconstructing the image comprises combining the at least one block for each of the high frequency components with the current lower resolution level to reconstruct the spatial region of interest at the successively higher resolution level.

31. (currently amended) The method of claim ~~22~~ 21, wherein requesting the spatial group comprises locating and retrieving each block of the spatial group from a remote storage device based on the decomposition level index and the tessellation block indices.

32. (currently amended) The method of claim ~~22~~ 21, wherein requesting the spatial group comprises recalling a local portion of the spatial group from local storage and retrieving a missing portion of the spatial group from remote storage.

33. (currently amended) The method of claim ~~33~~ 32, wherein requesting the spatial group comprises tracking local presence or absence of each of the plurality of addressable blocks.

34. (currently amended) The method of claim ~~33~~ 32, wherein requesting the spatial group comprises tracking local presence or absence of each of the data sets, which correspond to different image resolution levels of the image.

35. (currently amended) The method of claim ~~22~~ 21, comprising reference marking the spatial region of interest using the decomposition level index and the tessellation block indices of the plurality of addressable blocks.

36. (original) A method for tracking image data, the method comprising:
addressing data using a plurality of addressable blocks comprising a decomposition level index and tessellation block indices, wherein the decomposition level index refers to data sets generated from an image by lossless wavelet decomposition, and the tessellation block indices refer to spatial blocks tessellated from the data sets;
tracking presence or absence of the plurality of addressable blocks at a client via at least one tracking indicator; and
handling data communication between the client and a server via the decomposition level index, the tessellation block indices and the at least one tracking indicator.

37. (currently amended) The method of claim ~~37~~ 36, wherein the decomposition level index corresponds to a resolution level, the data sets comprising a plurality of different resolution levels.

38. (currently amended) The method of claim ~~37~~ 36, wherein the tessellation block indices comprise a row index and a column index for addressing spatial coordinates of the spatial blocks.

39. (currently amended) The method of claim ~~37~~ 36, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

40. (currently amended) The method of claim ~~40~~ 39, wherein the high frequency components of at least one of the successively higher resolution levels are tessellated into sets of the spatial blocks for each of the high frequency components.

41. (currently amended) The method of claim ~~40~~ 39, wherein the addressable blocks comprise a sub-band reference for addressing a desired one of the hierarchical set of sub-bands.

42. (currently amended) The method of claim ~~37~~ 36, wherein tracking comprises tracking local presence or absence of each set of the data sets, which correspond to different image resolution levels of the image.

43. (currently amended) The method of claim ~~37~~ 36, wherein tracking comprises toggling a Boolean flag.

44. (currently amended) The method of claim ~~37~~ 36, wherein handing data communication comprises requesting a spatial group of the plurality of addressable blocks, as needed based on the at least one tracking indicator, by referencing each block of the spatial group by decomposition level index and tessellation block indices.

45. (currently amended) The method of claim ~~45~~ 44, wherein requesting the spatial group comprises requesting at least one block of the spatial blocks for each high frequency component of at least one of the data sets, the at least one having an image resolution relatively higher than a local portion of the data sets stored at the client.

46. (currently amended) The method of claim ~~37~~ 36, comprising displaying the image within a spatial region of interest using the data that has been addressed, tracked and handled.

47. (currently amended) The method of claim ~~47~~ 46, wherein displaying the image data comprises combining at least one of the spatial blocks for each high frequency component of at least one set of the data sets with a low frequency component formed by at least one different set of the data sets, the at least one set having a higher image resolution than the at least one different set.

48. (currently amended) The method of claim ~~47~~ 46, comprising reference marking the spatial region of interest using the decomposition level index and the tessellation block indices of the plurality of addressable blocks.

49. (original) A system comprising:
an interface comprising:

an addressing module configured for addressing image data using a plurality of addressable blocks comprising a decomposition level index and tessellation block indices, wherein the decomposition level index refers to data sets generated from an image by lossless wavelet decomposition, and the tessellation block indices refer to spatial blocks tessellated from the data sets; and

a tracking module configured for tracking presence or absence of the plurality of addressable blocks at a client via at least one tracking indicator; and

a memory device configured to store the plurality of addressable blocks.

50. (currently amended) The system of claim ~~50~~ 49, wherein the decomposition level index corresponds to a resolution level, the data sets comprising a plurality of different resolution levels.

51. (currently amended) The system of claim ~~50~~ 49, wherein the tessellation block indices comprise a row index and a column index for addressing spatial coordinates of the spatial blocks.

52. (currently amended) The system of claim ~~50~~ 49, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

53. (currently amended) The system of claim ~~50~~ 49, wherein the tracking module is configured for tracking local presence or absence of each set of the data sets, which correspond to different image resolution levels of the image.

54. (currently amended) The system of claim ~~50~~ 49, wherein the tracking module comprises a display tracking module configured for tracking displayed images that are reconstructed from the data sets by using the addressable blocks, each of the data sets corresponding to a different resolution level of the image.

55. (currently amended) The system of claim ~~55~~ 54, wherein the display tracking module comprises a region tracking module configured for tracking a spatial area of interest within the displayed images using the addressable blocks.

56. (currently amended) The system of claim ~~50~~ 49, wherein the tracking module comprises a reference marking module configured for reference marking a spatial area of interest identified by the addressable blocks.

57. (currently amended) The system of claim ~~50~~ 49, wherein the interface comprises a communication handling module configured for selectively communicating the data between the client and a server via the decomposition level index, the tessellation block indices and the at least one tracking indicator.

58. (currently amended) The system of claim ~~58~~ 57, wherein the communication handling module comprises a selective retrieval module configured for retrieving at least one of the plurality of addressable blocks as needed for image reconstruction based on the at least one tracking indicator, the decomposition level index and the tessellation block indices.

59. (currently amended) The method of claim ~~50~~ 49, wherein the interface comprises an image reconstruction module configured for combining at least one of the spatial blocks for each high frequency component from at least one set of the data sets with a low frequency component formed by at least one different set of the data sets, the at least one set having a higher image resolution than the at least one different set.

60. (currently amended) The system of claim ~~50~~ 49, wherein the interface comprises a decompression module configured for decompressing each of the addressable blocks.

61. (currently amended) The system of claim ~~50~~ 49, wherein the system comprises a picture archiving and communication system.

62. (currently amended) The system of claim ~~50~~ 49, further comprising one or more imaging systems.

63. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise an MRI system.

64. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise a computed tomography system.

65. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise a positron emission tomography system.

66. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise a radio fluoroscopy system.

67. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise a computed radiography system.

68. (currently amended) The system of claim ~~63~~ 62, wherein the one or more imaging systems comprise an ultrasound system.

69. (currently amended) A computer program comprising:

a machine readable medium;

an addressing module stored on the machine readable medium, wherein the addressing module is configured for indexing data by decomposition level and spatial coordinates of tessellation, wherein the decomposition level refers to data sets generated from an image by lossless wavelet decomposition, and the spatial coordinates refer to blocks tessellated from the data sets; and

a tracking module stored on the machine readable medium, comprising

a tessellated block tracking module configured for tracking presence or absence of each of the plurality of addressable blocks at a client via a first Boolean ~~tag~~ flag; and

a decomposed level tracking module configured for tracking complete presence or complete absence of each of the data sets at a client via a second Boolean ~~tag~~ flag.

70. (currently amended) The computer program of claim 70 69, wherein the decomposition level corresponds to a resolution level, the data sets comprising a plurality of different resolution levels.

71. (currently amended) The computer program of claim 70 69, wherein the spatial coordinates comprise a row number and a column number for spatially identifying blocks of the tessellated data sets.

72. (currently amended) The computer program of claim 70 69, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

73. (currently amended) The computer program of claim 70 69, wherein the tracking module comprises a region tracking module configured for tracking a spatial area of interest by referencing the data that is indexed by decomposition level and spatial coordinates.

74. (currently amended) The computer program of claim 74 73, wherein the tracking module comprises a reference marking module configured for reference marking the spatial area of interest by decomposition level and spatial coordinates.

75. (currently amended) The computer program of claim 74 73, wherein the interface comprises a communication handling module configured for selectively

communicating the spatial area of interest between the client and a server based on the decomposition level and spatial coordinates.

76. (currently amended) The computer program of claim ~~70~~ 69, wherein the tracking module comprises an ordering module configured for handling the data in a desired order based on the decomposition level and spatial coordinates.